17. Water Sedge Ecological Series

Table 17-1. Full and short names for the ecological types in the Water Sedge Ecological Series.			
Ecological Type		**Plant Association**	
Code	**Name**	**Code**	**Short Name**
RI9	Water sedge-beaked sedge/tufted hairgrass–Very deep to deep Borohemists, Cryaquolls, and Cryaquepts–Flat to U-shaped floodplains, draw bottoms, and toeslopes, > 9,500 ft	CAAQ-CAUT/DECE	Sedge wetland–Deep cold gleyed soils–Concave water bowls

This is the *Carex aquatilis* series of Hess (1981) and Komárková (1986) and the *Carex aquatilis* Alliance of Kittel (1996). It also includes the *Carex utriculata* (*C. rostrata*) series of Hess and Wasser (1982) and Komárková (1986) and the *Carex utriculata* alliance of Kittel (1996). It is probably related to the Carex-Tufted Hairgrass Series of Donart and others (1978), and includes the *Carex scopulorum* Series, the *Carex praeceptorum* Series, the *Juncus ater* Series, and the *Eleocharis quinqueflora* Series of Komárková (1986). Stands series occupy small- to medium-sized patches (2-100 m²) in nearly flat bottom positions. They are sometimes associated with stream channels, but more often are not (Sturges 1968, Briggs and MacMahon 1983). Sites appear isodiametric on aerial photos.

Vegetation, Climate, Soils

Where beaked sedge (*Carex utriculata*) and water sedge (*Carex aquatilis*) occur together, beaked sedge occupies the wettest microsites, with water sedge in slightly better drained (marshy rather than ponded) microsites (Kittel and Lederer 1993, Girard and others 1995). (Beaked sedge-dominated stands associated with water sedge also invade old beaver ponds in tall-willow sites (Kittel and Lederer 1993).) When stands are disturbed, tufted hairgrass (*Deschampsia cespitosa*) and non-riparian forbs increase at the expense of water sedge or beaked sedge. If the disturbance continues, sites will become drier and may eventually be dominated by Kentucky bluegrass and dandelion (Girard and others 1995). Late seral plants in this series seem similar to those in Montana (Hansen and others 1989ab) or Nevada (Manning and Padgett 1989), but earlier seral plants are different species.

In northern Utah, Briggs and MacMahon (1983) studied 20 sedge wetlands, and found above-ground production to be 1,488 kg/ha/yr, ranging 780 - 3,600 kg/ha/yr. Sturges (1968) measured evaporation and evapotranspiration in a southeast Wyoming bog and derived an equation by regression relating potential evapotranspiration (E, mm) to daily pan evaporation (p, mm):

$$E = 7.1374p + 1.4986$$

Stands in this series are consistently wet for most of the year and highly productive. Andersen and others (1979) defined four Snow Zones in and around sedge meadows, based on a study area of approximately midseral stage, dominated by forbs. In north-central Colorado, Cooper (1990) found above-ground production in a near-climax sedge bog to be 3,800-4,700 kg/ha/yr. Cooper (1990) carbon-dated one site and found it to be > 11,000 years old.

Table 17-2. Dates and production in four snow zones around the center of a sedge meadow (Andersen and others 1979). Also see Table 17-5.						
		Above-ground Production, kg/ha/yr				
Snow Zone	**Emergence Dates (Mean)**	**Forbs**	**Grasses**	**Sedges**	**Rushes**	**Total**
1	< 5/29 (5/18)	1,168	384	120	24	1,696
2	5/29-6/11 (6/5)	1,272	536	104	8	1,920
3	6/12-23 (6/17)	1,176	360	192	40	1,768
4	> 6/23 (6/29)	656	192	232	64	1,144

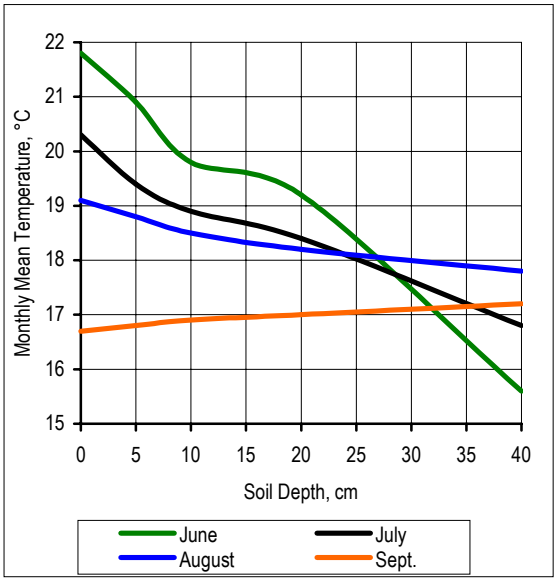

Fig. 17-1. Summer soil temperature and soil depth at sedge sites (Chapin 1981)

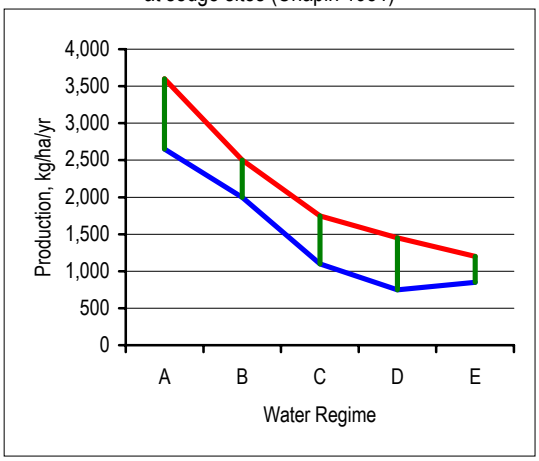

Fig. 17-2. Relationship between standing water and production (maximum and minimum shown). *Moisture Classes: A.* Running water year-round; *B.* Running water in spring, standing water all summer; *C.* Standing water all summer; *D.* Standing water half of summer; *E.* Standing water only in early summer (Briggs and MacMahon 1983).

Natural revegetation can be rapid if the water table can be re-established near the surface. Water sedge reinvades rapidly (Kovalchik 1987). If the water table has dropped, small check-dams or improved grazing systems can be used to bring it up (Kovalchik 1987). Willows (planeleaf or Wolf) may be planted from rooted cuttings on slightly better drained edges of these sites if desired, but they will likely not establish within the site, and they must be protected from beaver, big game, and livestock (Kovalchik 1987). Insects and diseases are not documented for this series.

Soils are very poorly drained, and sites often remain wet throughout the growing season. The water table is at or above the surface, and sites are covered with snow all winter (Hess 1981, Kittel and Lederer 1993). Low energy flooding is effectively trapped by the dense vegetation and dense root mats (Youngblood and others 1985-1989).

Table 17-3. Soil characteristics at several depths at sedge sites (Chapin 1981)

	Soil Depth, cm			
Soil Characteristic	**5**	**15**	**25**	**35**
Bulk density, g/cm³	0.16	0.27	0.30	0.59
Organic content (% dry)	58.6	43.9	25.7	34.2
pH	5.13	4.49	4.43	4.33
Available P, µg/cm³	3.06	2.05	2.06	3.01

Fire Management

Burning to remove excess litter and increase forage production is possible, though feasible only in rare, very dry seasons. However, this practice is not recommended as it reduces erosion protection and bank stability (see Kovalchik 1987, Hansen and others 1988). Burning favors tufted hairgrass (*Deschampsia cespitosa*) and bluejoint reedgrass (*Calamagrostis canadensis*), but sites must be protected from grazing after a fire, since these grasses are more palatable when young (Hansen and others 1988). Sometimes sites must not be grazed the year before burning so fuels can build up (Hansen and others 1989ab).

Range and Wildlife Management

Beaked sedge and water sedge are sometimes grazed heavily in situations where livestock can access them, usually in late season when they are not too wet (Kovalchik 1987) and when upland forage may not be as palatable. Sedges and grasses of earlier seral stages (in the UGB - Eggleston sedge, Bebb sedge, tufted hairgrass, bluejoint, Baltic rush) occur in drier patches and so are more accessible by livestock, and many of them are more palatable. Once livestock gain access to these sites, either by working their way in from the edges, or in dry years, deterioration is fairly rapid (Girard and others 1985).

Table 17-4. Climate and Soils		
Characteristic	**Value (range) ± s. d.**	**Reference**
Precipitation	890 mm/yr (740-1,200 mm/yr) 35 in/yr (29-47 in/yr), 85-90% of which is snow	Sturges (1968), Cooper (1990), Cooper and Andrus (1994)
Growing period	65-80 days	Sturges (1968), Chapin (1981)
July mean air temperature	8-9°C 46-48°F	Chapin (1981)
Soil heat sum (total above 0°C for growing season at 10 cm depth)	1,350 degree-days	
Mean July soil temperature	14.3°C (12-17°C)	
Mean soil temperature	Annual: 4°C (2-6°C) 39°F (36-43°F) Summer: 9°C (8-11°C) 48°F (46-52°F)	Jensen (1989)
Growing season (July 1-Sept. 10) precipitation	110 mm 4.3 in	Sturges (1968)
Soil pH	6.70 ± 0.53 6.2 (5.9 - 6.8)	nc Colorado, Johnson (1996) wc Wyoming, Cooper & Andrus (1992)
Soil Calcium (Ca)	2.9 mg/l (1.4-5.3 mg/l)	
Soil Magnesium (Mg)	1.20 ± 0.16 mg/l 0.5 mg/l (0.2 - 1.0 mg/l)	
Soil Potassium (K)	0.40 ± 0.21 mg/l	Johnson (1996)
Soil Sodium (Na)	1.93 ± 0.31 mg/l 1.3 mg/l (0.8 - 2.3 mg/l)	nc Colorado, Johnson (1996) wc Wyoming, Cooper & Andrus (1992)
Peat depth	>165 cm	Johnson (1996)
Water temperature	14 ± 6.2 °C 57 ± 11.2 °F	
Water table depth	+9.80 ± 2.95 cm +3.86 ± 1.16 in	

Table 17-5. Above-ground production before and after domestic sheep grazing in Snow Zones 2 and 3 (see Table 17-2) (Andersen and others 1979).			
	Average above-ground production before sheep grazing, kg/ha/yr	**Average used by sheep grazing, kg/ha/yr**	**Average grazing rate[1]**
Forbs	1,077 (370 - 1,920)	554 (320 - 780)	48.6%
Grasses	839 (110 - 1,430)	558 (50 - 1,010)	33.5%
Sedges	152 (60 - 240)	193 (160 - 220)	increased
Rushes	8 (0 - 30)	2 (0 - 4)	75.0%
Total	2,077 (1,970 - 2,136)	1,280 (1,000 - 1,460)	38.4%

1. For domestic sheep; I calculated this.

Season-long grazing damages plants, compacts soils, and drops water tables (Hansen and others 1988) or causes hummocking (Manning and Padgett 1989, Kittel and Lederer 1993). However, these sites often remain wet throughout the growing season, so they are somewhat resistant to livestock access (Girard and others 1985). Sites recover quickly if given complete or seasonal rest from grazing (Hansen and others 1988).

Waterfowl use the seeds of water and beaked sedges, and use the sites for nesting and cover (Hansen and others 1988).

Recreation, Roads & Trails, Scenery

Sites are not suitable for roads, trails, or construction of any kind, since they are wet or snow covered year-round. Crossings (for other than deep-winter use) must be bridged or stabilized, and fills must have a culvert. Attempted level crossings would be damaging and expensive, but since the sites are often small, such disasters are easily avoided by routing trails around them. Site and watershed damage may occur in early spring and late fall-early winter, when the sites are still liquid but may not be accessible.

Stands of this series are generally unsuitable for on-site summer recreation of any kind, since they are wet or snow-covered year-round. Recreation and trail use should be confined to transportation by skis or snowmobiles during deep winter when sites are frozen and snow-covered. Access to adjacent streams for fishing should be directed to drier sites if possible. Stands are very susceptible to trampling damage by humans (Cole 1985).

Campers, hikers, pack stock, or fishers can cause severe ruts (Hansen and others 1989ab). Fortunately, these small sites are easily avoided by those users. Off-road vehicles (ORVs) can cause extensive damage in the summer, and worse damage in early spring and late fall when sites are wettest. ORV use (except in the deep winter) should be discouraged; ORVs can usually be easily diverted from these small sites.

Table 17-6. Characteristics of Ecological Types within Ecological Series 17 in the Upper Gunnison Basin. Numbers are shown in form Average (Minimum-Maximum)

Code Short Name	No. Samples	Elevation, ft	Avg. Aspect, °M (r) Slope, %	Soil Coarse, %	Depth, cm Mollic, cm	Surface: Coarse, % Bare, %	Cover, %: Trees Shrubs Graminoids Forbs	Total Live Cover, % No. species TLC/NS, %
R19 Sedge wetland-Deep cold gleyed soils-Concave water bowls	18	10,382 (9,530-12,040)	139 (0.23) 1 (0-5)	13 (0-39)	95 (15-155) 59 (0-125)	4 (1-25) 18 (1-45)	0 (0-0) 1 (0-8) 93 (7-196) 32 (0-161)	128.8 (45.2-278.8) 13 (5-21) 12.0 (3.5-39.2)

A typical late seral site in the water sedge wetland type (Community Type A). Species diversity is *very* low – perhaps there are as many as five species in this whole bottom. Completely flat to concave at less than 0.6%, the site holding water through most of the season. Water sedge 98%, Eggleston sedge 55%, tufted hairgrass 43%. Coarse Fragments Cover = 0%, Total Live Cover = 196%, Number of Species = 3, Coarse Fragments in Soil = 0. Elk Park Quadrangle, elevation 10,980 ft, flat slope. August 24, 1990.

An early seral stage in water sedge wetlands (Community Type E). The broad leaves are dense-flowered dock 85% cover, marsh-marigold 20%, water sedge 18%, tufted hairgrass 12%. Alpine Plateau Quadrangle, elevation 10,840 ft, in a small bowl on a 1.7% NW-facing bench. September 30, 1982.

SEDGE WETLAND–DEEP COLD GLEYED SOILS–CONCAVE WATER BOWLS

Water sedge-beaked sedge/tufted hairgrass–
Very deep to deep Borohemists, Cryaquolls, and Cryaquepts–
Flat to U-shaped floodplains, draw bottoms, and toeslopes, >9,500 ft

Figure 17-3. Cross-section of vegetation structure of *Sedge wetland–Deep cold gleyed soils–Concave water bowls*. The tallest shrub layer typically averages 1.6 ft tall. Aspects are non-northerly, and slope angles average 12%.

Sedge wetland–Deep cold gleyed soils–Concave water bowls is a common type on concave, flat bowls in the middle to upper Subalpine, with deep, gleyed soils. In the Gunnison Basin, this type occurs in flat basins that hold water, somewhat away from streams. This type is also known from throughout the Rocky Mountains, from western Wyoming and Idaho, through the mountains of eastern Utah, in northern and central Colorado and in northern New Mexico. *Sedge wetland–Deep cold gleyed soils–Concave water bowls* is characterized by water sedge (CAAQ), beaked sedge (CAUT), tufted hairgrass (DECE), and sometimes other sedges; see Table 17-7 for common species names and codes. Distinguishing features of this type include location in poorly-drained flat basins, lack of willows except at the margins of sites, and Borohemists.

Sedge wetland–Deep cold gleyed soils–Concave water bowls is the only potential herbaceous wetland known in the Gunnison Basin below the Alpine zone. It supports remarkably few plant species, averaging only twelve per plot. Short willows sometimes grow around the margins of *Sedge wetland–Deep cold gleyed soils–Concave water bowls* sites, and this ecological type resembles wet openings occurring within sites of *Planeleaf willow/water sedge–Cold deep alluvial soils–Bottoms*.

The plant association *Carex aquatilis/ Deschampsia cespitosa,* described as new here, is based on *Carex aquatilis* Community Type of Youngblood (1985). Phase *Carex utriculata*, also described as new here, is based on *Carex aquatilis/Carex utriculata* (Hess 1981-1982, and Johnston 1987) and on *Carex utriculata* c. t. of Youngblood (1985). *Carex aquatilis/ Deschampsia cespitosa* phase *Deschampsia cespitosa-Calamagrostis canadensis* is described as new here.

Succession is remarkably fast, considering the cold climate of these sites. Wet-site sedges and grasses on these sites have good seed dispersal, long seed viability in the soil, and vigorous vegetative reproduction, and can reoccupy sites relatively quickly after disturbance if the impermeable basin forming the site is not breached.

In this cold climate, these sites are usually recognizable as riparian communities even at early seral stages. In very early seral to early seral stages. sites are dominated by weedy forbs and annuals, including such increaser bottomland species such as Kentucky bluegrass (POPR), dandelion (TAOF), Baltic rush (JUAR3), or alpine timothy (PHCO9). In early midseral to midseral stages, dominants include a mix of tufted hairgrass, a few wet sedges in the wettest spots, and moist-site forbs such as *Veronica* and *Epilobium*. In late midseral to potential natural community stages, the community is a thick sward of wet, rhizomatous sedges, with some tufted hairgrass mixed in, and few forbs.

Planeleaf willow/water sedge communities form the edges and boundaries of these sedge wetlands on very slightly better-drained soils. Thurber fescue grasslands adjoin this ecological type on much better-drained uplands. Water sedge wetlands are never adjacent to forest.

Livestock never use these sites, unless other forage is lacking. Horizontal obstruction is uniformly low to very low. These sites are not suitable for big game habitat.

Summary of Ecological Type Characteristics

1. Explanation of symbols in Appendix A. Percentages in [brackets] indicate the percentage of plots sampled that have that characteristic.

NUMBER OF SAMPLES	18, soil descriptions from 4 of these (total 18)
ELEVATION	10,382 ft (9,530-12,040 ft); 3,164 m (2,905-3,670 m)
AVERAGE ASPECT	139°M (r = 0.23)
LITHOLOGY	A wide variety
FORMATIONS[1]	A wide variety
LANDFORMS	Floodplains and draws [70%], some soil creep slopes or swales [15%]
SLOPE POSITIONS	Bottoms [79%]
SLOPE SHAPES	Flat [43%] to U-shaped [33%]
SLOPE ANGLE	1.3% (0-5%)
SOIL PARENT MATERIAL	Alluvium [70%] or colluvium [20%]
COARSE FRAGMENTS	2.2% (0-25%) cover on surface, 12.9% (0-39%) by volume in soil
SOIL DEPTH	95 cm (15-155 cm); 37.5 in (6-61 in)
MOLLIC THICKNESS	59 cm (0-125 cm); 23.4 in (0-49 in)
TEXTURE	Organic surface [75%]; subsurface gleyed with clay or sandy clay loam
SOIL CLASSIFICATION	Borohemists [44%] or Cryaquolls-Cryaquepts [44%]
TOTAL LIVE COVER	128.8% (45.2-278.8%)
NUMBER OF SPECIES	12.6 (5-21)
TOTAL LIVE COVER/NO. SPECIES	12.0% (3.5-39.2%)
CLIMATE	Cold to very cold, cold-air drainage pockets, upper Subalpine.
WATER	Water is ponded on the surface most of the year, or frozen.

Table 17-7. Common Species in *Sedge wetland–Deep cold gleyed soils–Concave water bowls*, where Characteristic cover > 10% or Constancy > 20%. "–" means that the species is not found. Dead cover is not listed. Ccv = Characteristic Cover, Con = Constancy. If Avc = Average Cover, then these are related using the formula Avc = Ccv•100%/Con.

	Community Type	A	B	C	D	E	
		Ccv(Con)	Ccv(Con)	Ccv(Con)	Ccv(Con)	Ccv(Con)	
Code	Species	N = 7	2	2	2	5	Common Name
	SHRUBS						
SAPL2	Salix planifolia	T (43)	1 (50)	– –	4(100)	1 (20)	planeleaf willow
	GRAMINOIDS						
CACA4	Calamagrostis canadensis	8 (43)	1 (50)	10(100)	3 (50)	T (20)	bluejoint reedgrass
CAREX	Carex	19 (14)	– –	– –	– –	– –	sedge
CAAQ	Carex aquatilis	80(100)	3(100)	58 (50)	4(100)	18 (80)	water sedge
CAEB	Carex ebenea	13 (14)	– –	– –	– –	– –	ebony sedge
CAEG	Carex egglestonii	55 (14)	– –	– –	– –	– –	Eggleston sedge
CAHO5	Carex hoodii	– –	– –	18 (50)	– –	– –	Hood sedge
CAJO	Carex jonesii	27 (14)	– –	– –	– –	– –	Jones's sedge
CAPR4	Carex praeceptorum	– –	– –	– –	32(100)	– –	teachers' sedge
CAUT	Carex utriculata	77 (29)	84(100)	– –	– –	– –	beaked sedge
DECE	Deschampsia cespitosa	17 (86)	T (50)	48(100)	– –	12 (20)	tufted hairgrass
ELQU2	Eleocharis quinqueflora	– –	1 (50)	– –	45 (50)	– –	few-flowered spike-rush
POAN	Poa annua	– –	– –	– –	– –	30 (20)	annual bluegrass
POPR	Poa pratensis	40 (14)	– –	– –	– –	– –	Kentucky bluegrass
	FORBS						
ACLA5	Achillea lanulosa	1 (14)	– –	3 (50)	– –	1 (40)	western yarrow
EPHO	Epilobium hornemannii	T (43)	– –	– –	– –	T (20)	Hornemann willow-herb
MIGU	Mimulus guttatus	– –	– –	– –	– –	18 (20)	common monkey flower
PEGR2	Pedicularis groenlandica	14 (14)	– –	– –	– –	– –	elephantella
POEA	Podistera eastwoodiae	70 (14)	– –	– –	– –	– –	Eastwood's podistera
PSLE	Psychrophila leptosepala	78 (29)	– –	3 (50)	– –	20 (20)	elkslip marsh-marigold
RAHYI	Ranunculus hyperboreus	– –	– –	– –	– –	25 (20)	floating buttercup
RUDE2	Rumex densiflorus	– –	– –	– –	– –	85 (20)	dense-flowered dock
TAOF	Taraxacum officinale	3 (29)	– –	1(100)	– –	3 (20)	common dandelion
VEAM2	Veronica americana	5 (29)	– –	1 (50)	– –	35 (40)	American brooklime
	FERNS & FERN-ALLIES						
HIVA	Hippochaete variegata	– –	– –	– –	– –	70 (20)	northern scouring-rush
	GROUND COVER						
.BARESO	bare soil	6 (29)	25(100)	14(100)	8(100)	26(100)	
.LITTER	litter and duff	95(100)	39(100)	86(100)	80(100)	58(100)	
GRAVEL	gravel 0.2-10 cm	–	–	–	–	–	
.COBBLE	cobble 10-25 cm	– –	– –	– –	– –	– –	
.STONES	stone > 25 cm	– –	– –	– –	– –	– –	
.MOSSON	moss on soil	11 (57)	– –	– –	– –	– –	
LICHENS	lichens on soil	–	65	15	88	6	

Key to Community Types

1. Water sedge >55% cover, usually >60%. Tufted hairgrass usually present, 0-45% cover. Total graminoid cover >115% ..... **A**
1. Water sedge sometimes absent, always <60% cover, usually <45%. Tufted hairgrass usually absent or <15% cover, sometimes up to 95% cover. Total graminoid cover <115% ..... (2)

2. Beaked sedge dominant, >75% cover. Water sedge usually present in small quantities. All other species <5% cover each ..... **B**
2. Beaked sedge absent to <5% cover ..... (3)

3. Teachers' sedge (CAPR4) prominent, >15% cover. Total graminoid cover 45-90% ..... **D**
3. Teachers' sedge absent or very minor. Total graminoid cover either <45% or >90% ..... (4)

4. Total graminoid cover <45% ..... **E**
4. Total graminoid cover >90% ..... **C**

Description of Community Types

A *Water sedge-wet sedges and forbs* is dominated by water sedge at >55% cover, sometimes codominant with beaked sedge. Tufted hairgrass is usually present, 0-45% cover. A variety of wet forbs may be present, such as marsh-marigold (PSLE), Eastwood's podistera (POEA), or elephantella (PEGR2). Total graminoid cover is 115-200%.

B *Beaked sedge-water sedge* is dominated by beaked sedge at >75% cover. Water sedge is always present but in small quantities, <10% cover. No other species has >10% cover. Total graminoid cover is 80-100%.

C *Tufted hairgrass-reedgrass-water sedge* is dominated by water sedge, bluejoint reedgrass (CACA4), or tufted hairgrass. Total graminoid cover is 90-120%.

D *Teachers' sedge-water sedge-sparse planeleaf willow* is dominated by teachers' sedge, sometimes codominant with tufted hairgrass. Total graminoid cover is 50-70%.

E *Water sedge-tufted hairgrass-annual bluegrass-moist forbs* is dominated by a variety of wet-site, moist-site, or moderately dry-site grasses and forbs. Total graminoid cover is <45%. One plot has conspicuous annual bluegrass (POAN).

Table 17-8. Community types within *Sedge wetland–Deep cold gleyed soils–Concave water bowls*.

Community Type	No. samples	Elevation, ft Slope, %	Coarseness, % Depth, cm Mollic Depth, cm	Surface Coarse, % Bare, % Seral Stage	Layer Height, m Lr	Avg Layr Cvr %	Cover, %: Trees Shrubs Graminoids Forbs	No. Species Total Live Cover, % TLC/NS, %	Prod.[1], lb/ac/yr Shrubs Gramin. Forbs	Obstruct'n %: 1.5-2.0 m 1.0-1.5 m 0.5-1.0 m 0.0-0.5 m Total<2m
A. Water sedge-wet sedges and forbs	7	10,340 (9,540-10,990) 1.2 (0-4)	13 (0-39) 115 (80-155) 74 (36-125)	* 6 (1-12) PN-LS	S 0.5 (0.0-0.8) GF 0.4 (0.0-0.7) M 0.0	T 99.3 10.9	0 (0-0) 0 (0-1) 148 (116-196) 41 (0-161)	12 (5-21) 189 (124-279) 19.3 (8.9-39.2)	0-14 1114-1614 0-699	0 (0-0) 0 (0-0) 0 (0-0) 67 (35-100) 17 (9-25)
B. Beaked sedge-water sedge	2	10,230 (10,230-10,230) 0.0 (0-0)	* * *	2 (1-2) 25 (10-40) LS-LM	*		0 (0-0) 1 (0-1) 89 (83-95) 0 (0-0)	10 (6-13) 90 (83-97) 10.6 (7.4-13.8)	0-15 687-848 0-0	*
C. Tufted hairgrass-reedgrass-water sedge	2	9,980 (9,920-10,040) 4.4 (3-5)	* * *	1 (1-1) 14 (8-20) MS	*		0 (0-0) 0 (0-0) 103 (101-105) 13 (8-17)	17 (16-18) 116 (113-118) 6.8 (6.6-7.1)	0-0 920-972 19-41	*
D. Teachers' sedge-water sedge-sparse planeleaf willow	2	10,920 0	* * *	2 (1-3) 9 (2-15) MS	*		0 (0-0) 4 (0-8) 61 (60-61) 0 (0-0)	9 (9-9) 65 (61-68) 7.2 (6.8-7.6)	4-87 423-431 0-0	*
E. Water sedge-tufted hairgrass-annual bluegrass-moist forbs	5	10,446 (9,530-12,040) 1.0 (0-3)	* 15 0	6 (1-25) 26 (10-45) EM	*		0 (0-0) 0 (0-1) 25 (7-40) 52 (4-110)	14 (10-18) 91 (45-141) 6.5 (3.5-11.7)	0-11 41-247 10-372	*

*. Unknown: measurements were not taken in this CT.

An example of a water sedge wetland (Community Type A). Beaked sedge 86%, marsh-marigold 84%, water sedge 65%, king's-crown 11%, bluejoint reedgrass 10%, tufted hairgrass 4%. Coarse Fragments Cover = 0%, Total Live Cover = 262%, Number of Species = 11. Coarse Fragments in Soil = 0. Soil sampled as an Hydric Borohemist, Euic. Mount Axtell Quadrangle, elevation 9,870 ft, 1.2% 151° (SE) slope. August 11, 1992.

Table 17-9. Resource Values for *Sedge wetland–Deep cold gleyed soils–Concave water bowls*. Resource values were calculated from the numbers in Table 17-8, relative to the whole UGB.

The numbers in this table can be translated: 0 = Very Low, 1 = Low, 2 = Moderately Low, 3 = Moderate, 4 = Moderately High, 5 = High, and 6 = Very High.

	Community Type				
Resource Value	**A**	**B**	**C**	**D**	**E**
Potential Cattle Forage Production	4	2	2-3	2-3	0-1
Grazing Suitability	ns[1]	ns[1]	ns[1]	ns[1]	0-1
Wetland	Yes	Yes	Yes	Yes	Mostly
Riparian Area	Yes	Yes	Yes	Yes	Yes
Developed Recreation	ns[1]	ns[1]	ns[1]	ns[1]	ns[1]
Dispersed Recreation	ns[1]	ns[1]	ns[1]	ns[1]	0-1
Scenic	0-1	0-1	0-1	0-1	0-1
Road & Trail Stability	0	0	0	0	0
Construction Suitability	ns[1]	ns[1]	ns[1]	ns[1]	ns[1]
Deer & Elk Hiding Cover	0-1	0-1	0-1	0-1	0-1
Deer & Elk Forage & Browse	0-1	0-1	1-2	1-2	1-2
Need for Watershed Protection	5-6	5-6	5-6	5-6	5-6
Soil Stability	1	1	1	1	1
Risk of Soil Loss-Natural	0-1	0-1	0-1	0-1	0-1
Risk of Soil Loss-Management	5	5	5	5	5
Risk of Permanent Depletion-Range	ns[1]	ns[1]	ns[1]	ns[1]	0-1
Risk of Permanent Depletion-Wildlife	0-1	0-1	0-1	0-1	0-1
Resource Cost of Management	5	5	5	5	5
Cost of Rehabilitation	4-5	4-5	4-5	4-5	4-5

1. Not suitable.